NEW AUSTRALIAN BUTTERFLY RECORDS (LEPIDOPTERA) FROM SAIBAI AND DAUAN ISLANDS, TORRES STRAIT, QUEENSLAND

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Abstract

Four butterfly species new to Australia are recorded and illustrated from northern Torres Strait islands: *Graphium codrus medon* (C. & R. Felder) and *Cyrestis achates nedymnus* C. & R. Felder from Dauan Island, *Hypochrysops chrysargyrus* Grose-Smith & Kirby from Saibai Island and *Arhopala philander gander* Evans from both islands. The relationship between *A. philander* C. & R. Felder and *A. madytus* Fruhstorfer is discussed. Field observations on the four species are provided and their distributions discussed.

Introduction

Saibai and Dauan Islands lie in the northern sector of Torres Strait, Queensland, close to the southern coastline of Papua New Guinea. Saibai is a relatively large, flat, muddy island covered mostly with mangroves and halophytic plant species, while Dauan, in contrast, is volcanic in origin with a large summit covered in boulders and extensive monsoonal vine thickets. They were considered to be remote up until the early 1980s, after which an airstrip was constructed on Saibai and ferry travel to Dauan was possible. Because of this remoteness, there were almost no records of butterflies from these two islands prior to the early 1990s. Moreover, no collection records appeared in the literature prior to Braby (2000), who provided a species list for these islands and nearby Boigu Island. Since the 1980s, a significant contribution to the knowledge of the butterfly fauna of Saibai and Dauan Is has been made by a number of collectors (S.S. Brown, S.J. Johnson, A.I. Knight, T.A. Lambkin, C.E. Meyer, P.S. Valentine and R.P. Weir). As a result, six butterfly species new to Australia have been discovered on these islands. *Cephrenes moseleyi* (Butler) was recorded from Saibai and Dauan by Lambkin and Knight (2004) and *Hypolycaena litoralis* Lambkin, Meyer, Brown & Weir was recently described from these islands (Lambkin *et al.* 2005). In this paper we document and illustrate four more species new to Australia, provide comments and field observations for each and discuss their identification and distribution.

Abbreviations of specimen depositories are: ANIC - Australian National Insect Collection, Canberra; CEMC - C.E. Meyer collection, Canberra; SSBC - S.S. Brown collection, Bowral; TLIKC - joint collection of T.A. Lambkin and A.I. Knight, Brisbane; UQIC - University of Queensland Insect Collection, Brisbane. Abbreviations of collectors are: AIK - A.I. Knight; CEM - C.E. Meyer; EC - E. Cameron; EJLH - E.J.L. Hallstrom; RPW - R.P. Weir; SSB - S.S. Brown; TAL - T.A. Lambkin; WWB - W.W. Brandt.

Graphium codrus medon (C. & R. Felder) (PAPILIONIDAE)

(Fig. 1)

Material examined. QUEENSLAND: 1 ♂, Dauan Island, Torres Strait, 17.ii.2004, TAL (TLIKC).

Comments. Graphium codrus (Cramer) is widely distributed from Malaysia through to the Solomon Islands, including Papua New Guinea (Parsons 1998). Its large size and prominent blunt tails make it one of the most distinctive members of the genus found in the region. C.E. Meyer (pers. comm.) first sighted a specimen on Dauan in April 2002. In February 2004, three more were observed on Dauan, one of which was collected. This specimen (Fig. 1) is referable to *G. c. medon*, as illustrated by Parsons (1998) and D'Abrera (1978), which occurs principally on mainland New Guinea (Parsons 1998). The specimens observed in 2004 were all feeding at *Melaleuca* blossom, while the one seen in 2002 flew over mangroves, pausing briefly at a flowering vine suspended from the top of a tree on the landward side of mangroves (C.E. Meyer pers. comm.). Typically, as in other members of the genus, the specimens observed flew rapidly and when at blossom fluttered nervously, alighting only briefly on each flower.

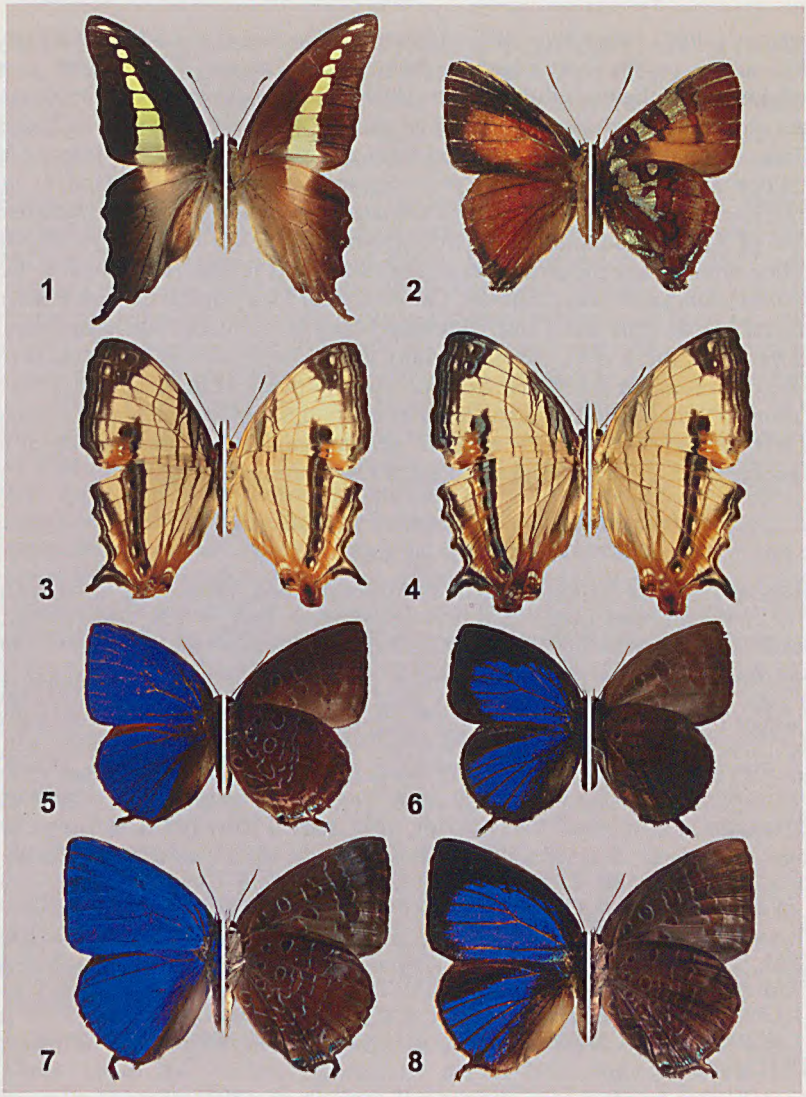
Parsons (1998) listed *Hernandia* species (Hernandiaceae) as larval host plants, with *H. nymphaeifolia* (C.Presl) Kubitzki noted as the strand host on Kiriwina Island in Papua New Guinea. A review of the distribution of *H. nymphaeifolia* (= *H. peltata* Meisn.) in northern Australia (Cribb and Cribb 1985, Hyland *et al.* 2003, A. Pollock and B.M. Waterhouse pers. comms), indicates that it is a rarely observed species occurring only to an elevation of a few metres above sea level (Hyland *et al.* 2003). To date, in Torres Strait *H. nymphaeifolia* has been observed only on Darnley Island (B.M. Waterhouse pers. comm., Hyland *et al.* 2003), with records also from the southeast coast of Papua New Guinea (A. Pollock pers. comm.). Considering the overall distribution of *H. nymphaeifolia* in this region, it is possible that it occurs as a strand species on Dauan and might be the host of *G. codrus* there.

Cyrestis achates nedymnus C. & R. Felder (NYMPHALIDAE)

(Figs 3-4)

Material examined. QUEENSLAND: 1 ♂, 1 ♀, Dauan Island, Torres Strait, 18.i.2004, AIK (TLIKC).

Comments. Cyrestis achates Butler occurs from Waigeo and Aru in eastern Indonesia to Papua New Guinea, including its outlying islands (Parsons 1998). In January 2004, two specimens referable to *C. a. nedymnus* were collected on Dauan, a male as it imbibed mineralized water from damp sand at a watercourse and a female from a flowering shrub. Both flew briskly with a gliding motion before settling with their wings outspread, behaviour typical of all Papua New Guinea species of *Cyrestis* Boisduval (Parsons 1998).



Figs 1-8. Butterflies from northern Torres Strait islands. All figures: upperside left, underside right; Figs 3-4 to scale, Figs 5-8 to scale. (1) *Graphium codrus medon* male, Dauan, 17.ii.2004, TAL [forewing length 49 mm]; (2) *Hypochrysops chrysargyrus* female, Saibai, 11.ii.2004, AIK [20 mm]; (3-4) *Cyrestis achates nedymnus*: (3) male, Dauan, 18.i.2004, AIK [26 mm], (4) female, Dauan, 18.i.2004, AIK [28 mm]; (5-6) *Arhopala philander gander*: (5) male, Saibai, 8.v.2000, AIK [23 mm], (6) female, Saibai, 8.v.2000, AIK [21 mm]; (7-8) *Arhopala madytus*: (7) male, Dauan, 5.v.2000, AIK [26 mm], (8) female, Dauan, 3.iv.2001, AIK [24 mm].

Parsons (1998) listed *Trophis* (= *Malaisia*) *scandens* (Lour.) Hook. & Arn. (Moraceae) as the host plant in Papua New Guinea. *T. scandens* is a scrambling or climbing shrub (Chew 1989) that typically grows in rainforest, including beach and monsoon forest (Hyland *et al.* 2003). Currently in Torres Strait, *T. scandens* is only recorded from the eastern islands of Murray (A. Pollock and B.M. Waterhouse pers. comms) and Darnley (Hyland *et al.* 2003). In Australia and Papua New Guinea, *T. scandens* is also the recorded host of *Euploea tulliolus* (Fabricius) (Nymphalidae) (Parsons 1998, Braby 2000), whose known distribution in Torres Strait is primarily confined to the eastern islands (Murray, Darnley, Campbell and Dalrymple), the two eastern central islands (Sue and Yam), Thursday Island in the south and Dauan Island in the north (pers. obs., De Baar 1988). All of these islands have stands of beach or monsoon forest and, considering that many of them have not been surveyed thoroughly for butterflies, especially during December and January (Lambkin and Knight 1990) when *C. achates* might predominately fly, it is possible that *C. achates* might also occur elsewhere in Torres Strait.

Arhopala philander gander **Evans** (LYCAENIDAE)

(Figs 5-6)

Material examined. QUEENSLAND: 1 ♂, Saibai Island, 18.vii.1975, EC (UQIC); 1 ♂, 1 ♀, same data except 29.ii.1996 (♂, genitalia vial) or 22.ii.1994 (♀), TAL (TLIKC: both illustrated by Braby 2000); 23 ♂♂, 30 ♀♀, same data except 18.iv.2000 (♂), 20.iv.2000 (♀), 21.iv.2000 (♀), 22.iv.2000 (2 ♂♂), 29.iv.2000 (2 ♀♀), 1.v.2000 (♀), 8.v.2000 (9 ♂♂, 2 ♀♀), 3.iv.2001 (♀), 5.iv.2001 (2 ♂♂, 2 ♀♀), 7.iv.2001 (♀), 3.v.2001 (3 ♂♂, 3 ♀♀), 4.v.2001 (2 ♀♀), 5.v.2001 (4 ♂♂, 4 ♀♀), 7.v.2001 (1 ♂, 8 ♀♀), 18.v.2001 (1 ♂, 1 ♀), 22.v.2001 (1 ♀), AIK (TLIKC); 1 ♂, 1 ♀, same data except 20.iv.-13.v.2000, AIK (CEMC); 4 ♂♂, 3 ♀♀, same data except 19-20.iv.2001 (1 ♀), CEM & SSB, bred larva-emerged 20.v.2001 (1 ♀), CEM, 25-26.iv.2002 (1 ♂, 1 ♀), CEM, SSB & RPW, 3-4.v.2002 (3 ♂♂), CEM, SSB & RPW (CEMC); 1 ♂, 2 ♀♀, same data except 20.iv.-13.v.2000, AIK (SSBC); 3 ♂♂, 1 ♀, same data except 20.iv.2001 (1 ♂), SSB & CEM, 3.v.2002 (2 ♂♂, 1 ♀), SSB, CEM, & RPW (SSBC); 1 ♂, 2 ♀♀, Dauan Island, 1.iv.2001 (1 ♂, 1 ♀), 4.iv.2001 (1 ♀), AIK (TLIKC); 1 ♂, 4 ♀♀, same data except 13-18.iv.2001 (1 ♂, 3 ♀♀), CEM & SSB, 26.iv.-2.v.2002 (1 ♀), CEM, SSB & RPW (CEMC); 3 ♂♂, 2 ♀♀, same data except 13-18.iv.2001, SSB & CEM (SSBC). PAPUA NEW GUINEA: 3 ♂♂, 1 ♀, Kiunga, Fly River, 2.vii-31.x.1957, WWB (♂, genitalia vial); 1 ♂, Amazon Bay Area, Deria, 700 ft, 11.xii.1962-9.i.1963, WWB; 1 ♀, Maprik (Sepik District), 600 ft, 1950, WWB and EJLH (ANIC).

Comments. A male specimen (in UQIC) of an *Arhopala* Boisduval species, new to Australia, was collected on Saibai in July 1975 by E. Cameron (G.B. Monteith pers. comm.). Its specific identity at that time was unknown and D.L. Hancock (G.B. Monteith pers. comm.) tentatively placed it within the '*centaurus*' species group of Evans (1957). Braby (2000) documented and illustrated a second male and a female from Saibai collected in the 1990s and referred to them as '*Arhopala* sp. Saibai.' Braby (2000) noted that these specimens resembled *A. philander* C. & R. Felder but, because of their worn

condition, they could not be positively identified. Since then, more specimens have been collected from Saibai and Dauan and comparisons between their external facies and genitalia and those of *A. philander* from the Western Province of Papua New Guinea (in ANIC), plus genitalia illustrations in Parsons (1998), have confirmed that the species is *A. philander*.

Evans (1957) divided *Arhopala* (as *Narathura* Moore) into 12 species groups. Parsons (1998) agreed with Evans' division but suggested that only eight of these groups occurred in Papua New Guinea. Evans (1957) and Parsons (1998) placed *A. philander* in the '*centaurus*' group, distinguished by having an unbroken underside forewing discal (postmedian) band (or only slightly dislocated at vein R_4), with the upper part directed to the dorsum (costa) and a long hindwing tail, ciliate on its dorsal side. Within this group in northern Torres Strait, *A. philander* appears closest in external facies to *A. madytus* Fruhstorfer (Figs 7-8), with which it occurs. Both species have a uniform purple sheen on the underside, which is particularly noticeable on fresh specimens. *A. philander* is generally smaller than *A. madytus*. On the underside of the wings, the pattern of *A. philander* is less distinct, the postmedian bands are narrower and the underside ground colour is darker brown than in *A. madytus*. On the upperside, both sexes of *A. philander* have a more purple hue than in *A. madytus*, while females of *A. philander* have less extensive areas of purple-blue than *A. madytus* females.

Arhopala philander occurs widely from Batjan and Halmahera in eastern Indonesia to Papua New Guinea, including some outlying islands. Torres Strait specimens appear indistinguishable from those from nearby Papua New Guinea and are referable to *A. p. gander*. In Torres Strait almost all specimens have been collected in or near mangroves although, in 2001, one of us (AIK) collected adults off foliage of *Terminalia catappa* L. (Combretaceae) behind the beach on Dauan.

***Hypochrysops chrysargyrus* Grose-Smith & Kirby** (LYCAENIDAE)

(Fig. 2)

Material examined. QUEENSLAND: 1 ♀, Saibai Island, Torres Strait, 11.ii.2004, AIK (TLIKC).

Comments. Hypochrysops chrysargyrus is a distinctive rainforest species (Sands 1986) that occurs sporadically across New Guinea, where it is endemic (Parsons 1998). In general, the species is considered rare (Parsons 1998), but males are known to frequently congregate on moist sand (Sands 1986). In February 2004, a female was collected on Saibai not far from the island's village. D.P.A. Sands (pers. comm.) and T.L. Fenner (in Parsons 1998) have observed the life history of this species in Papua New Guinea and report that the larvae feed on the fresh foliage of *Pommetia* (= *Pometia*) *pinnata* J.R. Forster & J.G. Forster (Sapindaceae) and are attended by ants. This tree, locally known as 'taun' in Papua New Guinea (Parsons 1998) is

grown in village gardens and produces edible fruit that resemble lychees (*Litchi chinensis* Sonn. Mill. [Sapindaceae]). Despite *H. chrysargyrus* being restricted primarily to rainforest and secondary forest (Parsons 1998), D.P.A. Sands (pers. comm.) considers it likely that *P. pinnata* might be grown in village gardens on Saibai and thus *H. chrysargyrus* could be resident on the island. Sands (1986) and Parsons (1998) reported that females are rarely collected and the specimen from Saibai is the fourth female known.

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